Insights Newsletter

From Universal Imaging Corporation, a subsidiary of Molecular Devices

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UIC Customers in the News

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Featured on Cover of *Scientific American*

An article by UIC customer Dr. R. Douglas Fields, PhD, from the National Institutes of Health, NICHD, Bethesda, MD was featured on the front cover of the April 2004 issue of *Scientific American*.

"The Other Half of the Brain" discusses the mounting evidence suggesting the importance of the brain's glia cells for thinking and learning. For the complete article, go to Scientific American.com at www.sciamdigital.com and locate the April 2004 issue.

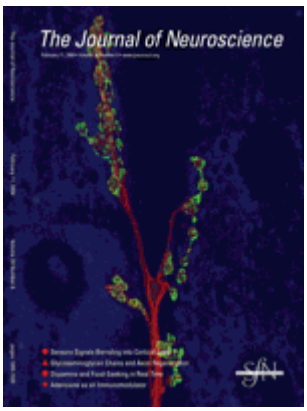
Dr. Fields' research focuses on activity-dependent plasticity in development. The long-range goal of this program is to provide a better understanding of the molecular mechanisms involved in regulating development and plasticity of the nervous system according to functional experience.

His principal objectives are: (1) to identify genes that can be regulated by appropriate patterns of neural impulses and that have important structural and functional effects on nervous system development and plasticity; (2) to identify the molecular mechanisms regulating gene expression in response to appropriate patterns of action potential firing; and (3) to explore functional consequences of activity-dependent gene regulation in development and plasticity of the nervous system. In pursuing these objectives a multi disciplinary approach is used, combining molecular, imaging, and electrophysiological techniques in preparations of mammalian neurons and glia *in vitro* and *in vivo*.

Dr. Fields has recently been appointed Editor-in-Chief of the new journal Neuron Glia Biology.

R. Douglas Fields (2004) The Other Half of the Brain. Scientific American. 26-33.

Featured on Cover of *The Journal of Neuroscience*



A research article by UIC customer Dr. Aaron DiAntonio, MD, PhD, from the Department of Molecular Biology and Pharmacology at the Washington University School of Medicine, St. Louis, MO was featured on the front cover of the February 2004 issue of *The Journal of Neuroscience*.

Dr. DiAntonio collaborated with Dr. Marcus J. Allen and Dr. Kevin G. Moffat of the Department of Biological Sciences, University of Warwick, Coventry, England.

His research interests focus on how synaptic strength changes as neuronal circuits develop and are modified by experience. His

laboratory's primary interest is the regulation of synaptic strength during development and a focus on 1) the role of postsynaptic activity in the regulation of presynaptic structure and function, and 2) molecular mechanisms underlying synapse formation and growth.

In this featured article, MetaMorph was used to measure the intensity of staining for various neurotransmitter (glutamate) receptors at Drosophila synapses. These results allowed them to put forward a model of glutamate receptor assembly at this synapse and to identify a novel mechanism controlling the strength of synapses.

Scott B. Marrus, Scott L. Portman, Marcus J. Allen, Kevin G. Moffat, and Aaron DiAntonio (2004) Differential Localization of Glumate Receptor Subunits at the *Drosophila* Neuromuscular Junction. The Journal of Neuroscience. 24(6):1406-1415.

Three Customers Elected to National Academy of Sciences

The following UIC customers were among the 72 scientists elected to membership in the National Academy of Sciences last month in recognition of their distinguished and continuing achievements in original research:

Dr. Richard L. Huganir
Investigator, Howard Hughes Medical Institute
Professor, Department of Neuroscience, Johns Hopkins University School of Medicine
MetaMorph Basic customer since 1998

Dr. David Julius
Professor, cellular and molecular pharmacology programs in cell biology and neuroscience, University of California, San Francisco
MetaMorph Premier customer since 1993

Erin K. O'Shea
Associate investigator, Howard Hughes Medical Institute
Professor and Vice Chair, Department of Biochemistry and Biophysics, University of California, San Francisco
MetaMorph Premier and MetaMorph Premier Offline customer since 2003

The National Academy of Sciences is a private organization of scientists and engineers dedicated to the furtherance of science and its use for the general welfare. Additional information about the institution is available on the Internet at http://national-academies.org.

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